

Abstract of the Disclosure

The present invention discloses devices and methods of performing high throughput screening of the physiological response of cells to biologically active compounds and methods of combining high-throughput with high-content spatial information at the cellular and subcellular level as well as temporal information about changes in physiological, biochemical and molecular activities. The present invention allows multiple types of cell interactions to be studied simultaneously by combining multicolor luminescence reading, microfluidic delivery, and environmental control of living cells in non-uniform micro-patterned arrays.